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ABSTRACT

Developed as part of the ABCs of Construction National Workplace Literacy Project, these modules contain materials for improving listening skills that are designed to be used in conjunction with a commercial training video in a required 8-hour Occupational Safety and Health Administration safety course. The first module, which is designed to prepare students to view a video on hazard communication, contains the following: a viewing/study guide to help students identify words and ideas from the video, a word list, material on the concept of main ideas and ways in which they may be organized, fill-in-the-blank exercises on topics covered in the hazard communication video, and information/exercises dealing with drawing conclusions. Included in the second module, which contains materials designed to prepare students to view a video on portable fire extinguishers, are the following: a list of pertinent vocabulary, material on the concept of main ideas and ways in which they are organized, reading materials covering the main topics covered in the video, and a viewing/study guide to help students identify important words and ideas from the video. (MN)

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ED 374 283

Improving Listening Skills: Hazards Communication
Listening Skills: Portable Fire Extinguishers

Associated Builders & Contractors, Inc.
EBR Adult & Continuing Education
Technical Development Center

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MODULES OF INSTRUCTION DEVELOPED IN GRANT CYCLE

1. Writing Frames for Construction Workers (10 exercises)

for low-level readers; consists of 10 "paragraphs" with open-ended sentences for workers to complete and recopy in their notebooks. Topics deal with work and training, such as "My Job," "Classroom Behavior," and "Listening to Myself."

2. Writing About Your Craft (10 topics)

for all students; list of 10 topics, such as "My Boss," "The Main Beef About My Job," and "How Work Orders Are Delivered." Used for integrating reading and writing in a job-specific context.

3. Building Workplace Vocabulary for E & I: Structural Analysis (80 pages)
Building Workplace Vocabulary for Millwrights: Structural Analysis(79 pages)
Building Workplace Vocabulary for Pipefitters: Structural Analysis(79 pages)

5th grade level; teaches word attack skills for technical terms, utilizing word parts and root words; includes hints for retaining meanings by building card file with visual representations of terminology.

4. Building Workplace Vocabulary for E & I: General, Specialized, & Technical Terms (58 pages)
Building Workplace Vocabulary for Millwrights: General, Specialized & Technical Terms (29 pages)
Building Workplace Vocabulary for Pipefitters: General, Specialized, & Technical Terms (32 pages)

5th grade level; teaches different kinds of vocabulary words encountered in work-related texts; drills for remembering new words; tips for building vocabulary; some dictionary use.

5. Building Workplace Vocabulary for E & I: Compound Words (28 pages)
Building Workplace Vocabulary for Pipefitters: Compound Words (18 pages)
Building Workplace Vocabulary for Millwrights: Compound Words (22 pages)

5th grade level; strategies for finding the meanings of compound words used in technical writing; works with words in context

6. Improving Listening Skills: Hazards Communication (18 pages)
Improving Listening Skills: Fire Extinguishers (22 pages)

a viewing, study guide that accompanies a commercial training video used in the required 8-hour OSHA safety course; learning new words, main ideas, and drawing conclusions are covered.

7. Measuring Decimals: Millwright (28 pages)

instruction and application problems

8. Improving Study Skills/Test Taking (60 pages)

6th grade level; good study skills are needed for success in the ABC Training program; explores strategies for organizing class notes and study time; analysis sheet for determining weaknesses in test preparation; how to schedule to arrange study time and work time

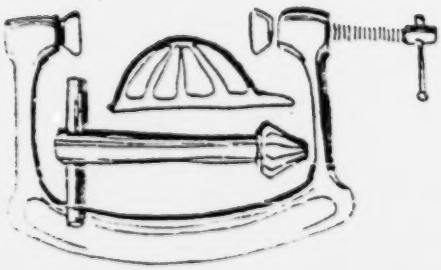
Computer Program

"Math for Pipefitters" is an interactive, multi-media program that covers fractions, decimals, angles, and right triangle geometry in a pipefitting context (88 screens)

TECHNICAL DEVELOPMENT CENTER

Improving Listening Skills

Hazards Communication



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This module of instruction is designed to accompany an OSHA safety video that is part of a required plant safety course.

THINKING ABOUT MEANING IN WHAT YOU SEE AND HEAR
A Viewing/Study Guide: Video HAZARD COMMUNICATION

OBJECTIVE

Using this material, you will be able to identify important words and ideas from the video **Hazard Communication.** You will need to see the video at least twice. (You may watch it more often if you wish.)

INTRODUCTION

This tape tells you about **Hazard Communication.** This tells you about dangers where you work. Hazard communication involves written information. You must know how to use this information. It tells you how to use hazardous materials safely. It tells you what to do in an emergency. It can save your life or the lives of those around you.

What do you usually do in an emergency? You depend on several things. First, you must figure out what is happening. What if you see smoke? What if you smell smoke? What if you feel heat? You decide that there is a fire. That is called drawing a conclusion. The smoke gave you a clue. The heat gave you a clue. You did not have to see the fire. You knew a fire had started. Then, what did you do? You knew a fire would be dangerous. Smoke is not the problem. Heat is not the problem. These are details. The damage that a fire can do is the problem. That is the main idea.

But, what if the fire involves dangerous chemicals? You must handle it differently. Hazard communications information tells you how. This tape helps you learn how to use hazard communications. It uses special language. It contains main ideas. It requires you to draw conclusions. This guide helps you figure these out.

NEW WORDS

A fire in a fireplace is not a problem. The same fire in your workplace can be a problem. What's different? The difference is in what surrounds the fire. This is called context. Context also helps you figure out new words. Understanding them depends on what you already know. Here are some words from the video. Rate yourself. Do you know the word? Give yourself a 3. Do you know a little about the word? Give yourself a 2. Is it a new word? Give yourself a 1.

Word	Rating	Word	Rating
HAZARD COMMUNICATION STANDARD	_____	RICH	_____
MSDS	_____	LEAN	_____
PHYSICAL HAZARDS	_____	EXTINGUISHING AGENT	_____
HEALTH HAZARDS	_____	BREATHING APPARATUS	_____
FLAMMABLE	_____	REACTIVITY	_____
EXPLOSIVE	_____	STABLE	
ACUTE	_____	UNSTABLE	_____
CHRONIC	_____	DECOMPOSITION	_____
WARNING LABEL	_____	CHRONIC EXPOSURE	_____
EXCEPTIONS	_____	ACUTE EXPOSURE	_____
STANDARD OPERATING PROCEDURES	_____	SAFE EXPOSURE LIMITS	_____
MATERIAL SAFETY SHEET DATA	_____	MAIN ROUTES OF ENTRY	_____
REVISION	_____	CLEANUP	_____
CHEMICAL NAME	_____	PROTECTIVE EQUIPMENT	_____

COMMON NAME _____

TRADE SECRET _____

THRESHOLD LIMIT VALUE (TVL) _____

PERMISSIBLE EXPOSURE LIMIT (PEL) _____

CONCENTRATION _____

OSHA _____

PHYSICAL DATA _____

VAPOR DENSITY _____

REACTIVITY DATA _____

FLASHPOINT _____

AUTOIGNITION TEMPERATURE _____

FLAMMABILITY LIMITS _____

LOWER EXPLOSIVE LIMIT (LEL) _____

UPPER EXPLOSIVE LIMIT (UEL) _____

DISPOSAL _____

PENETRATE _____

ENGINEERING CONTROL _____

EYEWASH FOUNTAIN _____

PRECAUTIONS _____

EMERGENCY RESPONSE INFORMATION _____

WRITTEN HAZARD COMMUNICATION PROGRAM _____

ULTIMATE _____

WORKPLACE SPECIFIC _____

HAZARD INDEX RATING _____

DETECT _____

MONITORING DEVICES _____

As you view the video, watch and listen for these words. The video will help you understand them better. It will give you a context for learning these words. Be sure those you rated 3 mean what you thought they did. Try to improve your understanding of words you rated 2. Listen for words you rated 1. Try to increase your rating to 2 or 3 by the end of the video. Watch the video. Rate yourself again.

Word	Rating	Word	Rating
HAZARD COMMUNICATION STANDARD	_____	RICH	_____
MSDS	_____	LEAN	_____
PHYSICAL HAZARDS	_____	EXTINGUISHING AGENT	_____
HEALTH HAZARDS	_____	BREATHING APPARATUS	_____
FLAMMABLE	_____	REACTIVITY	_____
EXPLOSIVE	_____	STABLE	
ACUTE	_____	UNSTABLE	_____
CHRONIC	_____	DECOMPOSITION	_____
WARNING LABEL	_____	CHRONIC EXPOSURE	_____
EXCEPTIONS	_____	ACUTE EXPOSURE	_____
STANDARD OPERATING PROCEDURES	_____	SAFE EXPOSURE LIMITS	_____
MATERIAL SAFETY SHEET DATA	_____	MAIN ROUTES OF ENTRY	_____
REVISION	_____	CLEANUP	_____
CHEMICAL NAME	_____	PROTECTIVE EQUIPMENT	_____
COMMON NAME	_____	DISPOSAL	_____
TRADE SECRET	_____	PENETRATE	_____
THRESHOLD LIMIT	_____	ENGINEERING	_____

VALUE (TVL)

PERMISSIBLE EXPOSURE LIMIT (PEL) _____

CONCENTRATION _____

OSHA _____

PHYSICAL DATA _____

VAPOR DENSITY _____

REACTIVITY DATA _____

FLASHPOINT _____

AUTOIGNITION TEMPERATURE _____

FLAMMABILITY LIMITS _____

LOWER EXPLOSIVE LIMIT (LEL) _____

UPPER EXPLOSIVE LIMIT (UEL) _____

CONTROL

EYEWASH FOUNTAIN _____

PRECAUTIONS _____

EMERGENCY RESPONSE INFORMATION _____

WRITTEN HAZARD COMMUNICATION PROGRAM _____

ULTIMATE _____

WORKPLACE SPECIFIC _____

HAZARD INDEX RATING _____

DETECT _____

MONITORING DEVICES _____

If you have problems, talk to your TDC instructor about other materials on using the context.

MAIN IDEAS

This video tells you about hazard communication. That is the topic. It has several main ideas. Sometimes you learn several related facts. The video will describe what each one. These will increase or develop your knowledge. This is called subject development. Sometimes you will learn items in a list. You will also learn a sequence, or steps in a process. There are many ways to communicate information about hazards. Some are similar. Some are very different. The video will compare and contrast those likenesses and differences. The video will give you problems you may face. It will tell you how to solve those problems. It will tell how chemicals cause dangers where you work. It will describe the effects of those dangers.

Main ideas, then, are organized in the following ways: **subject development, lists, steps in a process, likenesses, differences, problems and solutions, causes and effects.**

As you watch the video again, watch and listen for main ideas. The following guide will help you find each one. Fill in the blanks as you view the video. If you have problems locating main ideas, talk to your TDC instructor about other materials on finding main ideas.

Follow the guide as you view the video. Fill in the main ideas. You may need to see the tape more than once.

INTRODUCTION

You find chemicals in your home and workplace. Information and knowledge about the chemicals you work with creates a

_____.

When the hazards are known, the potential dangers are recognized and safety is ensured through taking the proper protective measures.

The Occupational Safety and Health Administration has developed the

_____

which gives you the right to know the dangers of any chemical you work with and right to be trained in how to protect yourself against those dangers.

The Hazard Communication Standard focuses on five areas:

1. Identifying _____
2. Product _____
3. Materials Safety Data Sheet (_____)
4. Written _____
5. Employee _____

IDENTIFYING HAZARDOUS CHEMICALS

2 Types of Chemical Hazards

1. _____outside the body
   examples: flammable, explosives
2. _____affect health through acute (short-term) exposure or chronic (long-term) use
   acute exposure examples: poisoning, chemical burns
   chronic use examples: cancer, heart disease

Chemical producers must identify potential hazards of any chemical they produce or bring into the country. Hazardous materials must be identified by

1. _____ _ _attached to each container
2. ____ __ _____sent to each company who uses the materials

Your company creates a safe workplace by

1. identifying all _____in the workplace
2. obtaining an up-to-data _____for each chemical
3. adopting appropriate _____ _____
4. communicating _____to workers through warning labels, MSDSs, written hazard communication program, and employee training.

WARNING LABELS

1. Required on all materials in the _____ and on materials _____.
2. Tells a worker that material is _____.
3. Should never be removed unless immediately _____.
4. Must identify the chemical and list _____ and _____ hazards.
5. Materials shipped from one place to another must provide the _____, _____, and _____of the manufacturer or other source of information about the material.

STEPS IN USING LABELS

1. _____ warnings on a label.
2. Check the _____ if you are unsure of anything.
3. If _____ or stationary process containers hold chemicals with similar dangers, employers can post warning signs, maintain standard operating procedures or provide similar written warnings rather than labeling each container.
4. _____are not considered containers and do not have to be labeled. Do not assume that unlabeled pipes are safe.
5. _____ _____do not have to be labeled if the chemical is transferred from a labeled container and if the chemical is to be used immediately by the employee who transferred it. An

unmarked container of a hazardous material unattended should never be left unattended. Don't assume an unmarked container contains a safe product.

MATERIAL SAFETY DATA SHEET

The _____ gives detailed knowledge for safe work practices. The company keeps a MSDS for every hazardous chemical in the area where the chemical is used.

BASIC INFORMATION

1. _____of chemical
2. If there are two MSDSs, use the one that is most _____.
3. Name, address, and phone number of _____ in case you have general questions.
4. _____ numbers for immediate information: either manufacturer, or CHEMTREC, the emergency response service of the chemical manufacturer's association
5. Date of last _____
6. ____ _____ name, _____name(s), chemical identity
7. ____ _____ and how to control them

8. For mixtures of chemicals, must provide information about those hazardous chemicals present in _____.

9. _____
(TLV)--maximum concentration that most people can be safely exposed to when averaged over an 8-hour day.

10. _____
(PEL)--safe concentration limit as determined by OSHA

PHYSICAL INFORMATION TO HELP YOU RECOGNIZE CHEMICALS

1. _____ and _____
2. _____ point
3. _ __ _____ pressure
4. _____ __ _____ rate

PHYSICAL HAZARDS

1. _____and _____ hazards
   --flashpoint
   --autoigntion temperature
   --flammability limits
     --upper explosive limit (too rich)
     --lower explosive limit (too lean)
2. _____ measures

REACTIVITY DATA

1. _____ or _____
2. conditions that can cause dangerous _____
3. hazardous substances released with _____

HEALTH HAZARDS

1. symptoms of _____or _____ exposure
2. safe _____ limits
3. _____ of entry into the body
4. _____ that can worsen as a result of exposure
5. causation of _____
6. emergency _____ measures (may be found at the beginning of the MSDS)

SAFE HANDLING AND USE

1. _____
2. _____ equipment
3. _____
4. handling _____ and _____
5. control of _____
6. conditions to _____
7. engineering _____

TO USE THE MSDS EFFECTIVELY, YOU MUST

1. Know where the _____ for each chemical is kept
2. Be familiar with _____ for each chemical
3. Know where to find _____information quickly
4. Check _____ whenever you are unsure or need more information.
5. Follow listed _____

WRITTEN HAZARD COMMUNICATION PROGRAM

1. describes hazards in the _____
2. tells how workers are to be informed of _____

THE PROGRAM

1. lists _____ in the workplace.
2. describes how required _____, _____, and employee _____ will be provided.
3. describes how _____ will inform you of hazards on unlabeled piping systems
4. describes how workers will be notified of hazards on _____ tasks

EMPLOYEE TRAINING

1. is _____specific
2. focuses on understanding of _____ you face
3. provides _____in your workplace

AND MUST. . .

1. Tell how to detect _____of hazardous chemicals
2. Describe _____ of chemicals in your workplace
3. Provide training in _____
4. Focus on understanding company _____ _____

THE HAZARD COMMUNICATION STANDARD GIVES YOU RIGHTS AND RESPONSIBILITIES:

Your responsibilities include:

1. reading _____ _____
2. understanding _____,
3. using _____by following safety practices

DRAWING CONCLUSIONS

A lot of hazard communication involves stated ideas. You read a sign. The sign tells you that a chemical is caustic and can cause burning. You know to be careful in handling it. You read another sign. The sign tells you that a chemical is flammable. You know you should not strike a match near the chemical. But, wait a minute? How did you know the first chemical would burn you??? How did you know that you shouldn't strike a match near the second chemical? You drew conclusions. This means you made a decision. You took the information that you found on the signs. You added what you already knew about hazardous chemicals. You figured out what to do. You drew conclusions.

The following questions and problems help you draw conclusions from the video. You may need to review your study guide or the video.

1. Why might a company fail to tell workers about the hazards of a particular chemical?

2. The video identifies two types of chemical hazards. These are physical hazards and health hazards. Workers sometimes seem to be more careful with those that are physical hazards. Why do you think workers might be less careful with chemicals that pose health hazards?

3. Why does your company have to keep MSDSs in the areas in which those chemicals are found?

4. Some workers have difficulty reading. What kinds of dangers does that pose in terms of hazard communication?

5. Why do warning labels have to be on all containers which hold a hazardous chemical?

6. Why don't pipes have warning labels?

7. You are moving some containers of chemicals. You must transfer one hazardous chemical from one container to another. You remove a label. You are in the process of getting another label when your supervisor calls you. What should you do?

8. You don't own a company. You just work there. Why should you have any responsibilities in terms of hazard communication?

9. Why might most manufacturers and CHEMTREC have 800 numbers for you to use?

10. Chemical substances are all around us. Name 2 chemicals found in your home.

1.

2.

Name 2 chemicals found in your workplace.

1.

2.

What are the hazards of working with these chemicals at home or on the job?

TECHNICAL DEVELOPMENT CENTER

LISTENING SKILLS

PORTABLE FIRE EXTINGUISHERS

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This module of instruction is designed to accompany an OSHA safety video that is part of a required plant safety course.

THINKING ABOUT MEANING IN WHAT YOU SEE AND HEAR
A Viewing/Study Guide: Video PORTABLE FIRE EXTINGUISHERS
(Instructor's Guide)

OBJECTIVE

Using this material, you will be able to identify important words and ideas from the video **Portable Fire Extinguishers.** You will need to see the video at least twice.

INTRODUCTION

Have you ever had a new job? Have you ever moved to a new job site? Of course you have! It was new to you, but you adjusted.

How? You learned the language. You learned names of people. You learned names of places. You learned words for new tools or duties.

You also learned the job. You looked at plans. You measured. You cut. You fitted pieces together. Those were the details, the parts of your job. What makes up your whole job? How do you describe what you do? That is the main idea.

You probably worked for someone. That person told you what to do. But that person couldn't tell you everything. You figured some things out for yourself. This is called a conclusion. This tape also has new words, main ideas, and conclusions. This guide helps you figure them out.

NEW WORDS

New ideas need new words. Understanding them depends on what you already know. Here are some words from the video. Rate yourself. Do you know the word? Give yourself a 3. Do you know a little about the word? Give yourself a 2. Is it a new word? Give yourself a 1.

Word	Rating	Word	Rating
TECHNOLOGY	_____	INHIBITING	_____
EXTINGUISHER	_____	FLAMMABLE	_____
TETRAHEDRA	_____	SMOTHERING	_____
ELEMENT	_____	PRESSURIZED	_____
OXYGEN	_____	SUBSTANCES	_____
FUEL	_____	EXTINGUISHING AGENT	_____
COMBUSTIBLE	_____	CLASSES OF FIRE	_____
SOLID	_____	COMBUSTIBLES	_____
LIQUID	_____	FIBROUS	_____
GAS	_____	INHIBIT	_____
VAPOR	_____	ENERGIZED	_____
CONVERT	_____	CONDUCT	_____
GASEOUS	_____	NUMERICAL	_____
HEAT	_____	FACEPLATE	_____
CHEMICAL CHAIN REACTION	_____	MULTIPURPOSE	_____
IGNITION	_____	RESIDUE	_____
CONDITIONS	_____	PASS METHOD	_____
PROPORTIONS	_____	PRECAUTION	_____
DILUTING	_____	INTENSIFY	_____
		RECHARGED	_____

As you view the video, watch and listen for these words. The video will help you understand them better. Be sure those you rated 3 mean what you thought they did. Try to improve your understanding of words you rated 2. Listen for words you rated 1. Try to increase your rating to 2 or 3 by the end of the video. Watch the video. Rate yourself again.

Word	Rating	Word	Rating
TECHNOLOGY	_____	INHIBITING	_____
EXTINGUISHER	_____	FLAMMABLE	_____
TETRAHEDRA	_____	SMOTHERING	_____
ELEMENT	_____	PRESSURIZED	_____
OXYGEN	_____	SUBSTANCES	_____
FUEL	_____	EXTINGUISHING AGENT	_____
COMBUSTIBLE	_____	CLASSES OF FIRE	_____
SOLID	_____	COMBUSTIBLES	_____
LIQUID	_____	FIBROUS	_____
GAS	_____	INHIBIT	_____
VAPOR	_____	ENERGIZED	_____
CONVERT	_____	CONDUCT	_____
GASEOUS	_____	NUMERICAL	_____
HEAT	_____	FACEPLATE	_____
CHEMICAL CHAIN REACTION	_____	MULTIPURPOSE	_____
IGNITION	_____	RESIDUE	_____
CONDITIONS	_____	PASS METHOD	_____
PROPORTIONS	_____	PRECAUTION	_____
DILUTING	_____	INTENSIFY	_____
		RECHARGED	_____

If you have problems figuring out the meanings, talk to your TDC instructor about the materials on using the context.

MAIN IDEAS

This video tells you about portable fire extinguishers. That is the topic. It has several main ideas. Sometimes you learn several related facts. The video will describe what each is. They will increase or develop your knowledge. This is called subject development. Sometimes you will learn items in a list. You will also learn a sequence, or steps in a process. Fire extinguishers are alike in many ways. They are different in others. The video will compare and contrast those likenesses and differences. The video will give you problems you may face. It will tell you how to solve those problems. It will describe the causes of different fires. It will describe the effects of those fires.

Main ideas, then, are organized in the following ways: SUBJECT DEVELOPMENT, LISTS, STEPS IN A PROCESS, LIKENESSES, DIFFERENCES, PROBLEMS AND SOLUTIONS, CAUSES AND EFFECTS.

As you watch the video again, watch and listen for main ideas. The following guide will help you find each one. If you have problems locating main ideas, talk to your TDC instructor about the materials on finding main ideas.

INTRODUCTION: As man and technology progress, more kinds of fires can occur. Some of these require specialized extinguishers.

DEFINITION OF FIRE: A chemical reaction involving burning of fuel

FIRE TETRAHEDRA

1. oxygen, at least 16%
2. fuel, a combustible material in solid, liquid, or gas form
3. heat, energy needed to raise temperature to ignition point
4. chemical chain reaction

SUPPRESSION, STOPPING A FIRE

WHAT	HOW
1. Remove fuel	not always practical
2. Dilute oxygen	CO_2 extinguisher
3. Cool temperature	pressurized water
4. Inhibit chemical chain reaction	Chemical substance Halon 1211 Sodium Bicarbonate (Multipurpose dry chemical) Potassium Bicarbonate (Purple K) Potassium Carbonate

Potassium Chloride
(Super K)

CLASSES OF FIRE

CLASS	KIND OF MATERIAL	HOW TO EXTINGUISH
A	ordinary combustibles (fibrous materials--paper, wood)	cool to below ignition point: soak fibers
B	combustible liquids, gases, greases (for example, gasoline)	remove oxygen to prevent vapors from igniting; inhibit chemical chain reaction
C	energized electrical equipment	extinguisher should not conduct electrical current; remove power source and extinguish like any other fire
D	combustible metals	burn at high temperatures; may react to water; requires special chemicals

RATINGS

A and B extinguishers have a numerical rating which shows what size of fire can be extinguished.

C extinguishers have a letter rating to show that they won't conduct current; also have an A/B rating.
D extinguishers carry rating for specific metals.

EXTINGUISHING AGENTS

AGENT	USED FOR	HOW IT WORDS
Water	A	cools temperature
Foam	A, B	cools and smothers
Multipurpose Dry Chemical agent	A, B, C	breaks chain reaction
Ordinary Dry Agent	B, C	breaks chain reaction
Dry Powder Agent	D	absorbs heat
CO2	B, C	smothers
Halons	B, C some A	breaks chain reaction; no residue

FIRE FIGHTING TECHNIQUE: PASS Method

1. PULL the pin.
2. AIM nozzle at base of flames.
3. SQUEEZE trigger and hold extinguisher upright.
4. SWEEP from side to side.

SAFETY PRECAUTIONS

1. Do not block path of escape.
2. If agent runs out/is ineffective, fire intensifies, or you can no longer fight fire, leave area immediately.
3. If possible, close door to isolate fire.
4. Call fire department or brigade.
5. Be sure fire is out.
6. Know location of fire extinguishers.
7. Know if extinguisher is safe to use.
8. Know class rating of the extinguisher.
9. Check to see that it is in good working order.
10. Report missing or broken extinguishers.

CONCLUSIONS

Some construction jobs are outdoor jobs. If the weather is bad, you may not be able to work. If you wake up to a thunderstorm, you may decide to go back to sleep. How did you know this? Nobody told you. You drew a conclusion based on the weather and the job.

The following questions and problems help you draw conclusions from the video. You may need to review your study guide or the video.

1. You have a container of water. It is heated to the boiling point. Will the water ever burst into flames? Why or why not? (HINT: Think about the fire tetrahedra.)

Water does not fuel a fire. No chemical chain reaction occurs.

2. Why is it important to know that some chemical

extinguishers leave a residue?

Because some equipment may be damaged by water or other materials.

3. You are using a bench grinder. It catches fire. What class fire is it? Why?

Class C, because it is electrical.

4. Cigarette ashes accidently start a fire in a trash barrel. What class fire is it? Why?

Class A, because trash is an ordinary combustible.

5. You see an extinguisher. It has a letter rating on it. What kind of extinguisher is it?

Class C

6. Some equipment catches on fire. You want to smother the flames. What extinguishing agent might you use?

CO2 or Foam

7. Some equipment catches on fire. You want to break the chain reaction. You don't want to leave a residue. What extinguishing agent might you use?

Halons

8. In using the PASS fire fighting technique. Why should you aim the nozzle at the base of the flames?

Because that's where the fuel of the fire is. You must cool, smother, break chain reaction, or absorb heat at that point.

9. You are fighting a fire in a room. You move to the wall opposite the door. The fire goes between you and the door. Which safety precaution did you miss?

You blocked your path of escape.

10. Why is it your responsibility to report fire extinguishers that are missing or in poor condition?

Because everyone is responsible for job safety. You may need that extinguisher some day. You need to be there and in good working order.

THINKING ABOUT MEANING IN WHAT YOU SEE AND HEAR
A Viewing/Study Guide: Video PORTABLE FIRE EXTINGUISHERS

OBJECTIVE

Using this material, you will be able to identify important words and ideas from the video **Portable Fire Extinguishers.** You will need to see the video at least twice. (You may watch it more often if you wish.)

INTRODUCTION

Have you ever had a new job? Have you ever moved to a new job site? Of course you have! It was new to you, but you adjusted.

How? You learned the language. You learned names of people. You learned names of places. You learned words for new tools or duties.

You also learned the job. You looked at plans. You measured. You cut. You fitted pieces together. Those were the details, the parts of your job. What makes up your whole job? How do you describe what you do? That is the main idea.

You probably worked for someone. That person told you what to do. But that person couldn't tell you everything. You figured some things out for yourself. This is called a conclusion. This tape also has new words, main ideas, and conclusions. This guide helps you figure them out.

NEW WORDS

New ideas need new words. Understanding them depénds on what you already know. Here are some words from the video. Rate yourself. Do you know the word? Give yourself a 3. Do you know a little about the word? Give yourself a 2. Is it a new word? Give yourself a 1.

Word	Rating	Word	Rating
TECHNOLOGY	_____	INHIBITING	_____
EXTINGUISHER	_____	FLAMMABLE	_____
TETRAHEDRA	_____	SMOTHERING	_____
ELEMENT	_____	PRESSURIZED	_____
OXYGEN	_____	SUBSTANCES	_____
FUEL	_____	EXTINGUISHING AGENT	_____
COMBUSTIBLE	_____	CLASSES OF FIRE	_____
SOLID	_____	COMBUSTIBLES	_____
LIQUID	_____	FIBROUS	_____
GAS	_____	INHIBIT	_____
VAPOR	_____	ENERGIZED	_____
CONVERT	_____	CONDUCT	_____
GASEOUS	_____	NUMERICAL	_____
HEAT	_____	FACEPLATE	_____
CHEMICAL CHAIN REACTION	_____	MULTIPURPOSE	_____
		RESIDUE	_____
IGNITION	_____	PASS METHOD	_____
CONDITIONS	_____	PRECAUTION	_____
PROPORTIONS	_____	INTENSIFY	_____
DILUTING	_____	RECHARGED	_____

As you view the video, watch and listen for these words. The video will help you understand them better. Be sure those you rated 3 mean what you thought they did. Try to improve your understanding of words you rated 2. Listen for words you rated 1. Try to increase your rating to 2 or 3 by the end of the video. Watch the video. Rate yourself again.

Word	Rating	Word	Rating
TECHNOLOGY	_____	INHIBITING	_____
EXTINGUISHER	_____	FLAMMABLE	_____
TETRAHEDRA	_____	SMOTHERING	_____
ELEMENT	_____	PRESSURIZED	_____
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FUEL	_____	EXTINGUISHING AGENT	_____
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HEAT	_____	FACEPLATE	_____
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		RESIDUE	_____
IGNITION	_____	PASS METHOD	_____
CONDITIONS	_____	PRECAUTION	_____
PROPORTIONS	_____	INTENSIFY	_____
DILUTING	_____	RECHARGED	_____

If you have problems, talk to your TDC instructor about other materials on using the context.

MAIN IDEAS

This video tells you about portable fire extinguishers. That is the topic. It has several main ideas. Sometimes you learn several related facts. The video will describe what each is. They will increase or develop your knowledge. This is called subject development. Sometimes you will learn items in a list. You will also learn a sequence, or steps in a process. Fire extinguishers are alike in many ways. They are different in others. The video will compare and contrast those likenesses and differences. The video will give you problems you may face. It will tell you how to solve those problems. It will describe the causes of different fires. It will describe the effects of those fires.

Main ideas, then, are organized in the following ways: **subject development, lists, steps in a process, likenesses, differences, problems and solutions, causes and effects.**

As you watch the video again, watch and listen for main ideas. The following guide will help you find each one. Fill in the blanks as you view the video. If you have problems locating main ideas, talk to your TDC instructor about other materials on finding main ideas.

INTRODUCTION: As man and technology progress, more kinds of fires can occur. Some of these require _____ .

DEFINITION OF FIRE: A _____ involving burning of fuel

FIRE TETRAHEDRA

1. _____, at least 16%
2. _____, a combustible material in solid, liquid, or gas form
3. _____, energy needed to raise temperature to ignition point
4. _____ _____

SUPPRESSION, STOPPING A FIRE

What	**How**
1. _____ fuel	not always _____
2. _____ oxygen	_____ extinguisher
3. _____temperature	_____ water
4. _____ chemical chain reaction	_____ substance such as Halon 1211 Sodium Bicarbonate (Multipurpose dry chemical) Potassium Bicarbonate (Purple K) Potassium Carbonate (Monex)

Potassium Chloride (Super K)

CLASSES OF FIRE

Class	Kind of Material	How to Extinguish
A	ordinary _____ (fibrous materials--paper, wood)	cool to below ignition point; soak fibers
B	_____ liquids, gases, greases (for example, gasoline)	remove oxygen to prevent vapors from igniting; inhibit chemical chain reaction
C	_____ equipment	extinguisher should not conduct electrical current; remove power source and extinguish like any other fire
D	combustible _____	burn at high temperatures; may react to water; requires special chemicals

RATINGS

A and B extinguishers have a _____ rating which shows what _____ of fire can be extinguished.

C extinguishers have a _____ rating to show that they won't conduct current; also have an _____ rating.

D extinguishers carry ratings for specific _____.

EXTINGUISHING AGENTS

AGENT	USED FOR	HOW IT WORKS
_____	A	cools temperature
_____	A, B	cools and smothers
_____	A, B, C	breaks chain reaction
_____	B, C	breaks chain reaction
_____	D	absorbs heat
_____	B, C	smothers
_____	B, C some A	breaks chain reaction; no residue

FIRE FIGHTING TECHNIQUE: PASS Method

1. _____ the pin.
2. _____ nozzle at base of flames.
3. _____trigger and hold extinguisher upright.
4. _____ from side to side.

SAFETY PRECAUTIONS

1. Do not block _____ _____.
2. If agent runs out/is ineffective, fire intensifies, or you can no longer fight fire, _____-.
3. If possible, close door to _____ fire.
4. Call _____.
5. Be sure fire is _____.
6. Know _____ of fire extinguishers.
7. Know if extinguisher is _____.
8. Know _____ of the extinguisher.
9. Check to see that it is in _____.
10. Report _____ or _____ extinguishers.

CONCLUSIONS

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